CALIFORNIA ENERGY COMMISSION
16 NINTH STREET
ACRAMENTO, CA 95814-5512

October 20, 1999

Mr. Mark Seedall
Duke Energy
655 3rd Street, Suite 49
Oakland, CA 94607

Dear Mr. Seedall:

MOSS LANDING POWER PLANT PROJECT DATA REQUESTS

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff requests the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, 3) assess whether the project will result in significant environmental impacts, 4) assess whether the facilities will be constructed and operated in a safe, efficient and reliable manner, and 5) assess project alternatives and potential mitigation measures.

Data requests are being made in the areas of: biological resources and water resources. Written responses to the enclosed data requests are due to the Energy Commission staff on or before November 22, 1999, or at such later date mutually agreed upon.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send a written notice to both Chairman William J. Keese, Presiding Member of the Committee for the Moss Landing Power Plant Project proceeding, and to me, within 15 days of receipt of this notice. The notification must contain the reasons for not providing the information, the need for additional time and the grounds for any objections (see Title 20, California Code of Regulations section 1716 (e)).

If you have any questions regarding the enclosed data requests, please call me at (916) 654-4074.

Sincerely,

Paul C. Richins, Jr.
Energy Facility Siting Project Manager

Enclosure

cc: Moss Landing Proof of Service List
Carl Wilcox, Department of Fish and Game
Chris Mobley, National Marine Fisheries Service
Ed Wylie, U.S. Army Corps of Engineers
Ken Sanchez U.S. Fish and Wildlife Service

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Technical Area: Biological Resources
Author: Marc Sazaki & Michael Foster

BACKGROUND: In the Supplemental Filing of Data Adequacy Information — Application for Certification — Moss Landing Power Plant dated July 30, 1999, the existing thermal plume is discussed beginning on page 24 in the second of two major chapters or parts identically titled and dated as Marine Biological Resources and Cooling Water Responses to the CEC s July 16, 1999 Supplemental Data Adequacy Information Request, Submitted July 21, 1999 . Figure 2 in the same part shows Existing Temperature Locations in relation to New Temperature Locations where temperature measurements have been taken in the vicinity of the Moss Landing Power Plant Project.

DATA REQUEST

25. Provide tables showing the results of temperature measurements taken at both existing and new locations. Each temperature measuring location must be uniquely identified in a systematic fashion.
26. Explain how these data were used to create contour maps of equal temperatures (isotherms).

BACKGROUND: In the Supplemental Filing of Data Adequacy Information — Application for Certification — Moss Landing Power Plant dated July 30, 1999, thermal tolerance, lethal temperatures, and thermal avoidance of longjaw mudsucker is discussed beginning on page 57 in the second of two major chapters or parts identically titled and dated as Marine Biological Resources and Cooling Water Responses to the CEC s July 16, 1999 Supplemental Data Adequacy Information Request, Submitted July 21, 1999 . Various reports are cited as references for this discussion.

DATA REQUEST

27. Provide a copy of reference, Moss Landing Power plant Units 1-5 316(a) Demonstration Supplement Infaunal Analysis and Fish Predator Prey Study. TERA Doc. No. B-81-51. 1981.

BACKGROUND: The southern sea otter (*Enhydra lutris nereis*), a marine mammal which inhabits Moss Landing Harbor and Monterey Bay, is federally listed as threatened and is a fully protected species under state statute. We are also aware that other mortalities have increased recently, apparently as a result of collisions by boats in the lower end of the slough and in the harbor. In addition, it is likely that harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*) are present in the same vicinity. The current status of these marine mammals in the Moss Landing Harbor and in the bay near the project s ocean discharge should be fully described. In the Supplemental Filing of Data Adequacy Information — Application for Certification — Moss Landing Power Plant dated July 30, 1999, sea otter foraging is discussed as it

relates to over-harvest of prey items on page 76 in the second of two major chapters or parts identically titled and dated as Marine Biological Resources and Cooling Water Responses to the CEC s July 16, 1999 Supplemental Data Adequacy Information Request, Submitted July 21, 1999 . If as suggested, the sea otters are eating more than the habitat in the area can provide, California Energy Commission staff questions whether the change in thermal character near the ocean discharge or in the harbor will affect the prey food availability for the sea otter, either negatively or positively. The same issue would apply to other marine mammals that inhabit the area.

DATA REQUEST

28. Provide the historical and current status of the marine mammals listed above and others if they exist in the vicinity of the project in Moss Landing Harbor and near the ocean discharge.

29. Where do the animals spend most of their time? If their presence or abundance near the project is on a seasonal basis, describe the nature of this occurrence.

30. What is the population of each species now and in the past ten years?

31. Has the recently reported population decline for southern sea otters within their known range been reflected in the local sub-populations near Moss Landing Harbor? If not, why not.

32. Will this project, either during construction/modification or during operation, increase boat traffic that might affect otter mortalities in the area? If so, what will be done to mitigate this potential impact. If not, provide an explanation of why this is not likely to occur.

BACKGROUND: Elkhorn Slough Description (p. 22 in the second of two major chapters or parts identically titled and dated as Marine Biological Resources and Cooling Water Responses to the CEC s July 16, 1999 Supplemental Data Adequacy Information Request, Submitted July 21, 1999): Text says that Elkhorn slough decreases in depth to the east, with deepest part 16 ft. near the Highway 1 Bridge. Recent studies, including one by the Corps of Engineers, have indicated the channel has become considerably deeper.

DATA REQUEST

33. Provide current information on slough depths and hydrography, and please explain how these changes in the slough might affect predicted distribution of the thermal plume in the Channel, Harbor, and lower Slough.

BACKGROUND: Maps Fig. 7 thru 14 show only one breakwater at the entrance to the harbor when there are really two. The temperature scale in Fig. 8 indicates a bay ambient temperature of 49-56 degrees F. However, the lowest temperature shown in the bay in Fig. 8 is 63 degrees F.

DATA REQUEST

34. Provide revised maps that show both breakwaters, and explain what is meant by ambient and how it is obtained.

BACKGROUND: The plume distribution in Figures. 9-14 raises numerous issues and questions. Bay ambient temperatures are listed as 49-56 degrees F. Temperatures just east of the discharge are generally indicated as 56-59 degrees. F, and just west the same or 59-63 degrees. F. It seems unreasonable that the discharge could be "ambient" (56 degrees. F) when it reaches the surface, especially at existing operation at low tide (Fig. 9). It also seems unreasonable that the same thing can happen after plant modification (Fig. 12). Given that bay ambient is "49 to 56 degrees F" and, for example in Fig. 12, highest temperature. around the discharge is "56 to 59 degrees. F," then it is possible that both could be 56 degrees. F and the discharge would be having no effect, even sitting right on top of it. This is even more surprising given that during historic operation (Fig. 8) surface temps. at the outfall appear to have reached 75 degrees. F. (Note that predicted discharge temperatures will be only a couple of degrees lower than in the past). Also, these predictions indicate that the plume will rarely enter the harbor. This would have a great effect on discussion of thermal effects.

DATA REQUEST

35. Provide complete documentation of how the plume maps were produced so they can be evaluated for accuracy.

BACKGROUND: The habitat letter designations are almost impossible to see on Fig. 15 (p. 42). Habitat numbers are said to range from 1-14, but some are "99."

DATA REQUEST

36. Provide a clearly readable map (color map would probably be more readable) with all designations fully explained in the legend or caption.

BACKGROUND: Effects on Benthos (p. 45) and Sandy Beach (p. 47): It is stated that prior reports (not clear which but probably reference 1) found no significant thermal plume effects. It is very difficult to evaluate this statement because it is hard to find the information in a long, unedited and unreviewed report. Moreover, what was the power of these statistical tests?

DATA REQUEST

37. Please extract the relevant information from the report cited and summarize it by species (or groups), including the sampling design used, the species or groups analyzed, the types of statistical tests used, and the power of these statistical tests to detect thermal plume effects.

BACKGROUND: It will be hard to evaluate the temperature effects on any habitats until plume distribution and delta T issues are clarified. For example, studies at Diablo Canyon have shown that *Mazzaella flaccida* is very sensitive to increased temperatures even though subjected to considerable temperature variation during normal tidal cycles. This species occurs on the Moss Landing Breakwaters. It is quite misleading to say, "Any discharge temperature changes that might reach these algae would be well within their normal exposure to tidal temperature changes." This is also true at Diablo Canyon but there were considerable changes to some of the intertidal plant and animal populations.

38. Review relevant studies on more abundant and temperature sensitive species (Mazzaella, Eel Grass, etc.), combine this information with realistic predictions of increased temperatures they will experience when covered at high tide with water heated by the thermal plume, and discuss the possible thermal effects.

Technical Area: Water Resources
Author: Joe O Hagan

BACKGROUND: Project construction and operation may adversely affect water quality through erosion, sedimentation and the discharge of contaminated stormwater runoff.

DATA REQUEST

39. Please provide a draft erosion control and stormwater management plan that identifies measures that should be implemented at the power plant and associated facilities. Such measures should include that necessary for clearing and modifying the existing intake structure for Units 1-5, which will now be used for the proposed units. The plan should identify all permanent and temporary measures in written form and depicted on a construction drawing(s) of appropriate scale. The elements of the plan should include temporary and permanent erosion control and stormwater runoff measures. The plan should also identify maintenance and monitoring efforts for all erosion and stormwater runoff control measures.

40. Please provide a discussion of the advantages and disadvantages of discharging stormwater runoff to the Elkhorn Slough and Morro Cojo Slough as compared to discharging the runoff to the Monterey Bay. On Figures 6.5-3 (existing water flow schematic) and 6.5-20 (proposed water flow schematic) of the AFC these are shown as outfalls 001, 003 and 002, respectively.

41. Please provide a copy of the existing Stormwater Pollution Prevention Plan for the existing facility and provide any draft changes necessary for the proposed facility.

42. Please provide the results of stormwater runoff sampling for the last five years.

BACKGROUND: Discharge of wastewater and once-through cooling water may adversely effect water quality.

43. Attachment 2 to Appendix 6.5-1 of the AFC provides intake and effluent characteristics for Units 6 & 7 for 1994. Please provide this information for years 1995 through 1998.

BACKGROUND: The AFC indicates that the existing Units 1-5 trash racks and traveling screens will be replaced to meet Clean Water Act Section 316(b) best technology available (BTA) requirements. The new intake and inlet screen approach velocities will be approximately 0.46 feet per second compared to the historic 0.9 feet per second for the Units 1-5 intake.

44. Please discuss the criteria on which the proposed use of traveling screens constitutes best technology available, and identify the alternative screen and/or

intake structure designs that were considered and the reasons they were not adopted.

45. Please indicate how and where historic and projected approach velocities were measured and/or calculated.

BACKGROUND: Thermal discharge of once-through cooling water from the proposed units represents a increase of the amount of heat loading and volume of water above the existing discharge for Units 6 & 7. Furthermore, estimates of thermal loading from Units 6 & 7 as shown on page 20, Table 5 of the July 21, 1999 Marine Biological Resources and Cooling Water Report in response to the CEC s July 16, 1999 Supplemental Data Adequacy Information Request, reflects a 40 percent average annual load for Units 6 & 7. In fact, however, Duke is proposing that Units 6 & 7 have an annual load factor of 57 percent. This likely means that this thermal discharge will have more peak days and higher average heat loading per minute.

Furthermore, the two proposed units will have a capacity factor of 90 percent. The new thermal discharge load swings will likely be from 1000 MW to 2500 MW over the course of a day, unlike the existing thermal discharge loading from Units 6 & 7, which ramp up and down from 0 to 1,500 MW over the course of a day. Given the minor increase in heat loading per gallon of discharge water, and the significant increase in the volume of discharge water, the thermal plume from the discharge of cooling water from the existing Units 6 & 7 and the proposed units should have higher peak ocean temperatures, be significantly larger than the existing thermal plume, and persist longer.

46. Please provide a description, including depictions, of the extent and temperature range of the thermal plume reflecting peak and long-term average operating conditions for Units 6 & 7 with a 57 percent annual load factor and 90 percent for the new units.